

TO: Commander, FCDNA

SUBJECT: Chairman's Report - Conference on Runit Cleanup, 4-5 October 1977

1. Subject conference convened as scheduled. Summarized minutes of the conference are attached (Encl 1).
2. Conclusions: Based on the discussions and agreements during the conference, the chairman concludes that:
 - a. The radiological data presently available does not permit an accurate refinement of the scope of work involved in the cleanup of Runit Island.
 - b. Additional data, both soil profile and in-situ survey, are required if the estimate of the volume of soil to be excised is to be refined with any degree of accuracy. The greater the density of the data obtained, the greater the accuracy of the refinement of the estimate.
 - c. Great expenditure of resources solely to define the scope of work in Runit Island cleanup is not warranted. Such an effort would be self-defeating.
 - d. To a very large extent the effort expended to definitize the scope of work in Runit Island cleanup can be done in such a manner that it will directly contribute to the effort required for certification of Runit Island. Such effort would be necessary in any event and can serve dual purposes.
 - e. A coordinated program should be established and conducted to simultaneously define the scope of work involved in Runit Island cleanup and contribute data required for eventual Runit Island certification.

Encl 1

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f. Plowing and/or mixing are not desirable or suitable techniques for meeting cleanup criteria. Both could be used after cleanup but must be carefully considered and justified.

3. Recommendations: The chairman recommends that the following program outline be transmitted to Commander, JTG for execution generally in the sequence listed, although some actions may be performed concurrently based on availability of assets.

a. In coordination with ERSP, establish, survey and mark, a 50 meter grid for the northern half of Runit.

b. Utilize FRST, other resources, and portable field instruments to search out and remove very small "hot spots" and plutonium chunks. This effort should initially be confined to the FIG/QUINCE area, concentrating on the areas shown as D level or higher concentration on the YVONNE June-July 1977 aerial survey. This effort is visualized as a locate-and-measure-and-shovel-and-bag operation. It is not intended to excise extensive areas of surface contamination. Its purpose is to attempt to pick up milligram and larger particles of plutonium concentrated in very small areas, generally less than one meter square. Removing such very high contamination level spots should reduce the size of the areas which in-situ survey will characterize as greater than 400 pCi/g, thus reducing the volume of surface soil to be excised. This effort should be carefully monitored and if it appears unproductive, should be stopped. Location, amount excised, and estimated activity for each excision should be recorded. Excised soil should be held for crater containment.

c. If resources are available, the effort outlined in b above should be tried in the Cactus crater vicinity. The test should be in the vicinity of USAF-RHL sample sites 9, 10, 27, 31 as shown on the Runit data map (to be provided). This effort should not be extensive. The Cactus crater area does not exhibit the same characteristics as the FIG/QUINCE area. The effort will probably not be productive in the Cactus crater area, but potential gain justifies a limited experiment provided sufficient resources are available not to interfere with other operations.

d. Using an IMP, conduct in-situ surveys on the established 50 meter grid, to define the size of the areas contaminated to levels greater than 400 pCi/g PU 239/240. In order to minimize risk of contamination of the IMP, this need not include a detailed survey of the area within the 400 pCi/g isopleth. However, data taken should be directly contributory to the full survey required for cleanup and certification. This effort should be confined to the FIG/QUINCE area and the Cactus crater area as indicated by the contamination isopleths on the YVONNE June-July 1977 aerial survey data.

e. Using backhoes, FRST, and other resources as available, perform soil profiling surveys in the central area (between FIG/QUINCE and Cactus crater areas) where no profile data is currently available. Ten to 15 profiles should be sufficient. Location and spacing of the sampling sites must be coordinated between JTG and ERSP and must lie on the 50 meter grid lines or agreed subdivisions thereof. Sampling locations selected must directly contribute to data required for cleanup survey and for certification. This effort should be initially limited to those areas selected for stockpiling contaminated debris and contaminated soil. (See h and i below for sampling techniques and analyses.)

f. Using backhoes, FRST, and other resources as available, perform soil profiling surveys in the FIG/QUINCE and Cactus crater areas. Sample locations and spacing must be coordinated between JTG and ERSP and must lie on the 50 meter grid lines or agreed subdivisions thereof. Sampling locations, insofar as possible, must be directly contributory to data needed for cleanup survey and for certification. This effort is intended to determine the limits of the subsurface contamination pockets indicated by soil sample data at sample points AEC 104, 111, 112; USAF-EPA 16, 12-1; and USAF-RHL 8, 15, 32, 10, 31, 27 and 9. If possible, this profiling effort should await completion of the in-situ survey of d above, but this is not a necessity. Profiling can be done before or concurrent with the in-situ effort. It is envisioned that this profiling effort will use iterative "one-half distance" techniques to establish the size of the subsurface pockets showing contamination levels in excess of 400 pCi/g PU 239/240.

g. As resources permit, continue soil profiling in other areas in northern half of Runit. Sample locations and spacing should be directly contributory to data needed for cleanup survey and for certification as well as characterization. Additional samples should be taken in each of the three areas, FIG/QUINCE, Cactus crater, and the central area. The objective is to further assurance of presence or absence of subterranean contamination. If pockets of contamination are found they should be defined as in f above.

h. Soil profiling operations will be subject to continuing coordination between JTG and ERSP to ensure maximum usability of data obtained. In general, a profile site depth of 120 cm will be sufficient. However, conditions may dictate greater depth, particularly near Ground Zero locations and berm or mound areas. Soil sample depth increment should be 20 cm with a discrete 5 cm deep sample taken from each 20 cm increment. Location of the 5 cm sample within the 20 cm increment to be coordinated between JTG and ERSP. Local conditions of interest may dictate additional samples or change of sample techniques. Such changes are the prerogative of CJTG in coordination with ERSP, subject to availability of resources.

i. Soil sample analysis should be done by first characterizing samples by a gamma scan in the ERSP laboratory. Samples which have very high or very low levels of contamination, as shown by gamma scan, may be set aside. The intermediate level samples would require further analysis by gross alpha count and by additional radio-chemical analysis of approximately five percent of these selected samples. Variation of these procedures is the prerogative of CJTG in coordination with ERSP. All samples taken must be properly identified for possible future analysis in support of certification.

j. Runit characterization soil sample inputs to the ERSP laboratory must be restricted in order to not interfere with other cleanup operations. Daily sample input of 50 soil samples can probably be supported without interfering with other operations. Final adjustment is the subject of coordination between JTG and ERSP. Resources allocated to Runit characterization should be adjusted as necessary to maintain work flow without laboratory overload.

k. As resources permit transects should be cut through all berms and mounds on northern Runit. Soil profile samples from such transects should be taken to radiologically characterize the contents. Soil profile cuts below the original surface may be required in such transects. This effort must contribute to cleanup survey and certification as well as characterization. Such work in the Cactus crater ejecta lip should be done only as opportune to other necessary operations. Major effort to characterize this area should not be made until extent of entombment area is better defined.

l. It is recognized that soil sampling locations indicated on the Runit data map are only approximate. Specific coordinates by the local grid system are not available. Locations shown on the Runit data map are the best presently available and on-site location must be done by scaling from the map. Coordinate data available will be provided separately.

m. CJTG must provide adequate priority for resources; logistics, transportation and personnel, to ensure smooth operational continuity. Priority should be second to Lojwa and Runit construction and equal to other radiological cleanup operations. Work schedules and immediate priorities must be set by CJTG in coordination with ERSP and other organizations concerned. The Runit characterization efforts outlined in a through f above should be considered as a part of the beginning cleanup operation and given appropriate priority. Target date for completion of data acquisition resulting from a through f above is 15 January 1978.

n. Stockpiling of contaminated debris and soil from other islands may have to be adjusted from planned locations to avoid interference with characterization of the FIG/QUINCE area. Contaminated soil must be separated into two stockpiles: one stockpile for soil excised from areas contaminated to levels greater than 400 pCi/g; the second stockpile of soil excised from areas of lesser contamination.

CHARLES J. TREAT
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Chairman